

# kernKill

Loadable Linux kernel module

@vk\_khr\_ptr

# USB Kill

# Not USB Killer

```
Applications  Places  Sun Sep 20, 1:53 PM  root@localhost: ~/Desktop/usbkill-master/usbkill
File Edit View Search Terminal Help

root@localhost:~/Desktop/usbkill-master# ./setup.py install
running install
running build
running build_py
running build_scripts
creating build
creating build/scripts-2.7
copying and adjusting /root/Desktop/usbkill-master/install/usbkill -> build/scripts-2.7
changing mode of build/scripts-2.7/usbkill from 644 to 755
running install_lib
warning: install_lib: 'build/lib.linux-i686-2.7' does not exist -- no Python modules to install

running install_scripts
copying build/scripts-2.7/usbkill -> /usr/local/bin
changing mode of /usr/local/bin/usbkill to 755
running install_data
running install_egg_info
Removing /usr/local/lib/python2.7/dist-packages/usbkill-1.0_rc.4.egg-info
Writing /usr/local/lib/python2.7/dist-packages/usbkill-1.0_rc.4.egg-info
root@localhost:~/Desktop/usbkill-master# ls
build install README.md Resources setup.py usbkill
root@localhost:~/Desktop/usbkill-master# cd usbkill
root@localhost:~/Desktop/usbkill-master/usbkill# ls
__init__.py usbkill.py
root@localhost:~/Desktop/usbkill-master/usbkill# chmod +x usbkill.py
root@localhost:~/Desktop/usbkill-master/usbkill# ls
__init__.py usbkill.py
root@localhost:~/Desktop/usbkill-master/usbkill# ./usbkill.py

usbkill
```

# Target Audience

- Activists;
- Hacktivists;
- Journalists;
- Politics;
- Dissidents.

# Why Linux

## **Windows/Mac → GNU/Linux**

- Open Source;
- Provable Security;
- Independent from Tech Corporations.

# Why Kernel-Space?

User-space:

- User-space service can be disabled remotely by any kind of software;
- Easy detectable in systems.

Kernel-space:

- Can't be unloaded by unprivileged users;
- Can masquerade as other drivers and modules.

# Security pre-requirements

- GNU/Linux system (with modern compatible hardware);
- Software encrypted SSD/HDD via dm-crypt;
- Encrypted, updated and locked UEFI;
- Encrypted, updated and locked BootLoader.

Best class solution: most ThinkPad's

# Main Principles

## Module architecture

- The module is registered in the kernel as a USB subsystem driver;
  - `.probe = etx_usb_probe()`,
  - `.disconnect = etx_usb_disconnect()`,
- At each probe and disconnect:
  - Check `id→idVendor == USB_VENDOR_ID && id→idProduct == USB_PRODUCT_ID`  
  
`kill_proc_info()`,  
`kernel_power_off()`,  
`etc.`

# Anti-Forensic Perspective

**You're in trouble, what's next?**

If Security pre-requirements OK that's enough;

Possible threats:

- Cold boot attacks (get encryption keys from memory) – really rare.



# Hackathon Progress

- MVP:
  - USB sub-system registration;
  - Probe and Disconnect detection;
  - Device verification;
  - Kernel-shutdown and proc-kill.

# Plans

- Debug;
- Verification via S/N;
- Experiments with veracrypt containers;
- Create useful configuration tool;
- Try to develop Kernel Extension for macOS.

thx

lazy\_static!



@VK\_KHR\_PTR



github